Attorney Docket: YOR920010262US2

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Applicant(s)	Vugranam C. Sreedhar
Docket No.:	YOR920010262US2
Serial No.:	09/925,580
Filing Date:	August 9, 2001
Group:	2192
Examiner:	Ted T. Vo

I hereby certify that this paper is being deposited on this date with the U.S. Postal Service as first class mail addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Signature: Kevin Mason Date: August 18, 2006

Title: Method and Apparatus for Programming Software Components

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TRANSMITTAL LETTER

Mail Stop Appeal Brief - Patents
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith are the following documents relating to the above-identified patent application:

1. Response to Notification of Non-Compliance with 37 C.F.R. §41.37; and
2. Twice Corrected Appeal Brief.

In the event of non-payment or improper payment of a required fee, the Commissioner is authorized to charge or to credit **IBM Corporation's Deposit Account No. 50-0510** as required to correct the error a duplicate copy of this letter is enclosed.

Respectfully,

Kevin M. Mason

Date: August 18, 2006

Kevin M. Mason
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RESPONSE TO NOTIFICATION OF NON-COMPLIANCE WITH 37 C.F.R. §41.37

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Notification of Non-Compliance with 37 C.F.R. §41.37, dated July 18, 2006, Applicants submit herewith a Corrected Appeal Brief.

Respectfully submitted,

Dated: August 18, 2006

Kevin M. Mason
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TWICE CORRECTED APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellants hereby submit this corrected Appeal Brief to conform to the current format requirements. The original Appeal Brief was submitted on December 21, 2005 to appeal the final rejection dated May 23, 2005, of claims 2-4, 10-12, and 18 of the above-identified patent application.

REAL PARTY IN INTEREST

The present application is assigned to International Business Machines Corporation, as evidenced by an assignment recorded on August 9, 2001 in the United States Patent and Trademark Office at Reel 012067, Frame 0529. The assignee, International Business Machines Corporation, is the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

The present application was filed on August 9, 2001 with claims 1 through 20. Claims 1, 5-7, 9, 13-15, 17, and 19 were cancelled in the Amendment and Response to Office Action dated August 26, 2004. Claims 8, 16, and 20 were cancelled in the Amendment and Response to Office Action dated September 15, 2005. Claims 2-4, 10-12, and 18 are presently pending in the above-identified patent application. Claims 2-4 remain rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. Claims 2-4, 10-12, and 18 remain rejected under 35 U.S.C. §102(b) as being anticipated by Magee et al. ("Composing Distributed Object in CORBA," 1997 IEEE (CiteSeer)).

STATUS OF AMENDMENTS

The amendments in the Amendment and Response to Office Action dated September 15, 2005 have been entered.

SUMMARY OF CLAIMED SUBJECT MATTER

The present invention is directed to a method and apparatus for programming software components that treats software components as the basic unit of abstraction and computation (page 4). A software component is encapsulated and classes and other program entities, such as data fields and methods, within a given component do not exist beyond a component boundary (pages 4-6 and 8-13). A component interacts with other components only by means of a defined set of input and output ports (page 4). A component can inherit and implement ports declared in a template and can declare and implement new ports (page 5). A component can only access the external environment through its output ports. An output port of one component can only be connected to a conforming input port of another component. A connect statement is an explicit plumbing operation for connecting components together (pages 14-15). Interactions between components are loosely coupled (page 9). A related set of templates can be grouped together to form a group. Groups are useful for implementing implicit invocation and multicasting (page 11).

In one embodiment, a method executed by a processor for programming a software component is disclosed comprising the steps of: defining properties of the software component, including at least one input port and at least one output port (page 4 and 10-13); providing a software mechanism for instantiating the software component (pages 10-25); and utilizing an attach command to attach at least one input port to a class (page 5-9). Each input port 112 in a component 110 should be attached (using the attach command) to some concrete class with in the component 110. (Page 12, lines 5-6.)

In one embodiment, a system for programming a software component is disclosed said system comprising: a memory that stores computer-readable code; and a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to: define properties of the software component, including at least one input port and at least one output port (page 4 and 10-13); provide a software mechanism for instantiating the software component (pages 10-25); and utilize an attach command to attach at least one input port to a class (page 5-9).

In one embodiment, an article of manufacture for programming a software component is disclosed, said system comprising: a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising: a step to define properties of the software component, including at least one input port and at least one output port (page 4 and 10-13); a step to provide a software mechanism for instantiating the software component (pages 10-25); and a step to utilize an attach command to attach at least one input port to a class (page 5-9).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 2-4 are rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. Claims 2-4, 10-12, and 18 are rejected under 35 U.S.C. §102(b) as being anticipated by Magee et al.

ARGUMENT

Section 101 Rejections

Claims 2-4 were rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter and because the cited claims are manipulating an abstract idea. Regarding claim 4, the Examiner asserts that the claim is not tangibly embodied.

The Supreme Court has stated that the "[t]ransformation and reduction of an article 'to a different state or thing' is the clue to patentability of a process claim." *Gottshalk v. Benson*, 409 U.S. 63, 70, 175 U.S.P.Q. (BNA) 676 (1972). In other words, claims that require some kind of transformation of subject matter, which has been held to include intangible subject matter, such as data or signals, that are representative of or constitute physical activity or objects have been held to comply with Section 101. *See, for example, In re Warmerdam,* 31 U.S.P.Q.2d (BNA) 1754, 1759 n.5 (Fed. Cir. 1994) or *In re Schrader*, 22 F.3d 290, 295, 30 U.S.P.Q.2d (BNA) 1455, 1459 n.12 (Fed. Cir. 1994).

Thus, as expressly set forth in each of the independent claims, the claimed methods or system describe a method for programming a software component that instantiates a software component and attaches an input port to a class utilizing an attach command, thereby transforming the instantiated software component. This instantiation of a software component and transformation of the software component (and input port) provides a useful, concrete and tangible result.

In addition, claim 4 recites that the method is ***executed by a processor.*** Claim 12 is directed to a system and claim 18 is directed to an article of manufacture. Applicant believes that each of claims 2-4 are in full compliance with 35 U.S.C. §101 and, accordingly, Applicant respectfully requests that the rejection under 35 U.S.C. §101 be withdrawn.

Section 102(b) Rejections

Independent Claims 4, 12 and 18

Independent claims 4, 12, and 18 were rejected under 35 U.S.C. §102(b) as being anticipated by Magee et al. Regarding claim 4, the Examiner asserts that Magee

discloses utilizing an attach command to (Magee discloses tools to develop structure systems of components shown in FIGS. 1-4, where the structure shown in these figures includes input ports of class), attach at least one of said at least one input port to a class (FIGS. 1-4 show input ports are attached in components). In the Advisory Action, the Examiner asserts that the specification's description "based on the short mentioning of the above passage does not patentable different to the components and the components' attachment shown in the reference."

Appellant notes that Magee does not utilize an explicit command to attach an input port to a class, and thus the implementation ***cannot*** *change at run time*. The present invention *utilizes an* ***explicit attach command***. Contrary to the Examiner's assertion, the utilization of an explicit attach command is patentable subject-matter and is well supported in the specification. For example, the present disclosure teaches that "a component *must attach each of its input ports* to a concrete class within it." (Page 3, lines 3-4; emphasis added.) The present disclosure also teaches that "each input port 112 in a component 110 should be attached (***using the attach command***) to some concrete class with in the component 110." (Page 12, lines 5-6; emphasis added.) Finally, the present disclosure teaches that

> the following code segment defines a component 110, referred to as BooleanComp, implementing the template, BooleanTempl, defined above:
>
> component BooleanComp implements BooleanTempl {
> *attach xin BoolClass ; // attach input port xin to class BoolClass ;*
> BooleanComp() {...} // constructors.
> class BoolClass implements Bool {
> boolean not(boolean x) { ...} ;
> boolean nand (boolean x, boolean y) {...}
> }
> }
> *Thus, the input port xin is "attached" to the class BoolClass.*
>
> (Page 6, line 23, to page 7, line 6; emphasis added.)

Independent claims 4, 12, and 18 require utilizing an attach command to attach at least one of said at least one input port to a class.

Thus, Magee does not disclose or suggest utilizing an attach command to attach at least one of said at least one input port to a class, as required by independent claims 4, 12, and 18.

Conclusion

The rejections of the cited claims under section 102 in view of Magee et al. are therefore believed to be improper and should be withdrawn. The remaining rejected dependent claims are believed allowable for at least the reasons identified above with respect to the independent claims.

The attention of the Examiner and the Appeal Board to this matter is appreciated.

Respectfully,

Date: August 18, 2006

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CLAIM APPENDIX

1. (Cancelled)

2. The method of claim 4, further comprising the step of allowing said software component to access an external environment only through said output port.

3. The method of claim 4, further comprising the step of allowing a client to access said software component only through said input port.

4. A method executed by a processor for programming a software component, said method comprising the steps of:

defining properties of said software component, including at least one input port and at least one output port;

providing a software mechanism for instantiating said software component; and

utilizing an attach command to attach at least one of said at least one input port to a class.

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. The system of claim 12, wherein said processor is further configured to allow said software component to access an external environment only through said output port.

11. The system of claim 12, wherein said processor is further configured to allow a client to access said software component only through said input port.

12. A system for programming a software component, said system comprising:

a memory that stores computer-readable code; and

a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to:

define properties of said software component, including at least one input port and at least one output port;

provide a software mechanism for instantiating said software component; and

utilize an attach command to attach at least one of said at least one input port to a class.

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. An article of manufacture for programming a software component, said system comprising:

a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising:

a step to define properties of said software component, including at least one input port and at least one output port;

a step to provide a software mechanism for instantiating said software component; and

a step to utilize an attach command to attach at least one of said at least one input port to a class.

19. (Cancelled)

20. (Cancelled)

EVIDENCE APPENDIX

There is no evidence submitted pursuant to § 1.130, 1.131, or 1.132 or entered by the Examiner and relied upon by appellant.

RELATED PROCEEDINGS APPENDIX

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 CFR 41.37.